United States Department of Agriculture
Agricultural Research Service
General Services Division
6505 Belcrest Road
Hyattsville, Maryland
20782

SEP 12 1989

Mr. Michael F. Gearheard
Chief, Waste Management Branch
USEPA, Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Dear Mr. Gearheard:

I am pleased to submit for your review and approval our proposed closure plan (Enclosure 1) for the septic system at the Yakima Agricultural Research Laboratory. The draft plan we submitted with our July 19, 1989, letter has been revised to reflect your May 17 and August 17, 1989, comments.

Enclosure 2 provides additional discussion of those comments.

A copy of this closure plan has also been provided to Mr. Dennis Bowhay, Washington Department of Ecology.

After the closure plan is approved, the project will be advertised for bid, and a contract will be awarded to a qualified firm. Every reasonable effort will be made to complete closure activities and initiate post-closure monitoring within 180 days after plan approval, as provided in the Resource Conservation and Recovery Act regulations.

I would like to extend an invitation and request to you or a member of your staff to participate as a full member of our technical evaluation panel. In the past, we have found this to be an excellent way to improve interagency cooperation and communication.

To discuss any technical points of the plan and to keep us informed of your efforts, please contact Terry Roark or George Sundstrom, Safety and Health Policy Staff, General Services Division, on FTS 436-7175 or COMM 301-436-7175.

Sincerely,

Richard C. Bachman

RICHARD C. BACHMAN
Director

2 Enclosures

cc:
T. Clark, AM
W. Ashworth, CAD, w/encls.
R. Dolphin, YARL, w/encls.
T. Roark, GSD
C. Reder, PWA, w/encls.
G. Sundstrom, GSD
A. Humphrey, PWA

ENCLOSURE 1

RESOURCE CONSERVATION AND RECOVERY ACT CLOSURE PLAN
SEPTIC SYSTEM USED FOR DISPOSAL OF PESTICIDE WASTES
YAKIMA AGRICULTURAL RESEARCH LABORATORY
YAKIMA, WASHINGTON
SEPTEMBER 8, 1989

SUMMARY OF THE CLOSURE PLAN

The central components of this plan to achieve and demonstrate clean closure at this facility under the Resource Conservation and Recovery Act (RCRA) are:

- o a survey of local ground water recharge and withdrawals,
- o filling critical data gaps remaining from previous studies,
- o excavation and removal of the septic tank and its contents (along with any contaminated soil),
- o treatment and/or disposal of any resultant hazardous wastes at a RCRA-permitted treatment or disposal facility,
- o collection and analysis of environmental samples to assess closure success (including installation of additional monitoring wells to allow characterization of the uppermost aquifer and to assess the hydraulic connectedness of the uppermost and next lower aquifer, and
- o restoration of the site to its previous condition,

A successful clean closure is expected, and it will achieve the following:

-eliminate the need for further maintenance,
-eliminate post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground, surface waters, or the atmosphere, thus protecting human health and the environment,and
-comply with the general requirements of 40 CFR 265.111.

Completion of closure activities within one hundred eighty (180) days after Environmental Protection Agency (EPA) and/or Washington Department of Ecology (WDOE) approval of the closure plan is planned.

After closure, quarterly ground water samples will be collected for one year, at which time a decision on the need for continued monitoring will be made in coordination with EPA and WDOE. After post-closure monitoring is complete, the monitoring wells will be properly sealed and abandoned.

This closure and post-closure monitoring will support Superfund National Priority List (NPL) delisting of the facility.

SCHEDULE FOR FINAL CLOSURE

Closure and post-closure activities will be carried out on the following "expected-case" schedule:

Day	Activity
0	(EPA and WDOE action) EPA and WDOE approval of closure plan finalized.
1	Closure plan activated. Contract out for bid.
31	Opening of bids.
55	Contractor selected.
115	Project plans finalized.
120	Work begins on site.
140	Septic tank/visibly contaminated soil removed. Additional monitoring wells installed.
165	Source removal demonstrated. Post-closure monitoring (quarterly) begins.
180	Closure certification made by professional engineer.
560	Post-closure monitoring complete.
590	Post-closure certification made by professional engineer.

If site conditions or other factors force a change in the closure schedule or objective, ARS will notify EPA and WDOE immediately, and a plan amendment in accordance with 40 CFR 265.118 will be prepared. At the end of one year of post-closure monitoring, the need for further monitoring will be evaluated.

FINANCIAL ASSURANCE

Sufficient funding to complete the closure and post-closure activities necessary at this site will be made available by the Agricultural Research Service.

SITE LOCATION

The septic system is on the grounds of the Yakima Agricultural Research Laboratory, 3706 West Nob Hill Boulevard, Yakima, WA. It is located in a nearly-level, gravel-covered area immediately east of several buildings. (See Attachment 1.) The septic tank is located in an area under a shed roof. With the exception of the drainfield stones, gravel, and the concrete washdown pad, all site materials are believed to be native. The water table lies at a depth of 30-35 feet below the surface.

SITE HISTORY

From 1965 until approximately 1985, the Yakima Agricultural Research Laboratory operated an onsite septic system into which dilute pesticide wastes were discharged. This unit is the only hazardous waste management unit at the facility.

The septic system, inactive and isolated from all inputs since 1985, consisted of a 300-gallon, concrete septic tank and a drainfield composed of a 30-foot-long drain tile set 2-4 feet below grade. The drainfield was constructed by excavating a 30-inch wide trench to a depth of 8-9 feet (generally the top of a cemented caliche layer), backfilling it to the drain tile level with coarse (3-inch diameter) gravel, placing the tile, and filling to the surface with native soil. The septic system's drain tiles were excavated, removed, drummed, and disposed properly offsite, along with the cuttings and other waste materials generated during an earlier investigation.

Estimates of annual inputs during the life of the septic system are: 5000 gallons from washing pesticide application equipment and 250 gallons of residual pesticide solutions, together totaling less than 100 pounds of active ingredients per year. To meet the requirements of 40 CFR 265.112(b)(3), the maximum inventory of hazardous waste is estimated at 2000 pounds (100 pounds per year times 20 years of active life). A list of pesticides that may have been disposed in the system is provided as Attachment 2. Sanitary wastes from a toilet and sink were also disposed through this system.

On the strength of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Field Investigation Team's work for the Environmental Protection Agency (EPA) in 1982, this site received a Hazard Ranking System score of 29.33 and was added to the Superfund National Priority List (NPL). The EPA also ruled the site subject to the requirements of 40 Code of Federal Regulations, Part 265 (40 CFR 265).

In preparation for RCRA closure of the facility in accordance with Subpart G of 40 CFR 265 and remedial action under CERCLA, ground water monitoring wells and other site-characterization activities were initiated in coordination with EPA and the WDOE in 1988. Although not all of the four monitoring wells installed in 1988 are ideally located, two are hydrologically downgradient. After a half dozen rounds of sampling and analysis, pesticide contamination of ground water has not been detected in any of the monitoring wells.

CLOSURE OBJECTIVE

The objectives of this RCRA closure are to achieve and demonstrate "clean closure" of the septic system in accordance with Subpart G of 40 CFR 265. In support of the project objective, post-closure monitoring and other activities will be conducted to assess the existence of environmental contamination requiring additional remediation.

If the stated objectives cannot be achieved as presented, the closure plan and/or post-closure monitoring effort will be modified. If source control

is achieved but environmental contamination necessitates further remedial action, this action will be taken under the provisions of CERCLA.

SUMMARY OF PREVIOUS FINDINGS

Analysis of septic tank solids revealed the presence of several pesticides at concentrations as high as 24,000 parts per million (ppm). Drain tiles also were found to contain pesticide residues, although at much lower levels (less than 100 ppm). Soils beneath the drainfield contained several pesticides, most notably tetraethylpyrophosphate, in the ppm range. None of the pesticides listed in Attachment 2 has been detected to date in the facility's monitoring wells.

DESCRIPTION OF ACTIONS TO BE TAKEN DURING CLOSURE

Project plan. To accomplish the project objectives, ARS plans to procure the services of a qualified environmental contractor. The contractor will be required to develop and strictly adhere to a comprehensive project plan and schedule consistent with the concepts and approaches outlined in this closure plan. The project plan will identify the specific methods to be used for removing, transporting, treating, storing, and/or disposing of all hazardous waste. It will include a detailed sampling/analysis plan for soils and ground water based on the discussion below and on applicable EPA and State guidance documents. It will also identify and address all reasonably anticipatable equipment and personnel needs, phases, levels of control, technical and regulatory requirements, safety considerations, contingencies, and operational and analytical methodologies for investigation and remediation work at RCRA facilities and Superfund sites in general, and this site in particular.

At a minimum, the project plan and schedule will address in detail each of the items referenced in the previous paragraph as well as the following areas:

- applicable codes and standards for the work to be performed.
- a survey of local water use.
- site and project management procedures, monitoring, and documentation.
- construction and completion methods for monitoring wells.
- sampling and analysis procedures and criteria for both soil and water.
- septic system excavation/removal/disposal procedures and criteria.
- materials and waste handling procedures.
- contaminated soil identification/removal procedures and criteria.
- treatment/disposal options (landfilling, incineration, etc.) and selection criteria.
- phases, milestones, and project schedule.
- site safety, contingency, and emergency procedures, plans, and triggers.
- routine and emergency environmental monitoring.

- o proposed cleanup criteria/standards.
- o analysis of existing information to identify essential data gaps and needs.
- o QA/QC criteria and standards.
- o quantitative risk assessment of the "closed" facility.

Analysis of existing information and identification of critical data gaps. The contractor selected to execute this closure plan will be directed to review existing reports, records, and regulatory agency correspondence/comments to determine the existence of critical data gaps. Already incorporated into this plan are an area well survey, additional monitoring wells, additional soil and water samples, and improved aquifer characterization. As directed by ARS, the contractor will incorporate his recommendations for filling other critical data gaps into the project plan.

Sampling and analysis plan. This section indicates the general requirements and approach to be followed in the approved sampling and analysis plan. A more detailed sampling and analysis plan will be prepared by the project contractor. It will be consistent with the most recent version of SW-846 and contain, at a minimum, the items identified below:

- o a statistical basis/methodology for types, numbers, and locations of samples.
- o pollutants to be analyzed. Except where noted, all analyses will include, at a minimum: volatile organic compounds (VOC's), semivolatile organic compounds, organochlorine and organophosphorus pesticides, and metals. The analysis of ground waters will include all VOC's on the Superfund hazardous substance list.
- o provisions to ensure that all analyses are completed within allowable holding times.
- o measurement of water levels and well depths on a monthly basis. The device to be used for measuring water levels is to be specified.
- o the order in which wells will be sampled.
- o detailed, step-by-step procedures for pre-sampling purging and sampling of wells.
- o the type(s) of sampling containers and samples.
- o the order in which samples are to be collected. (VOC samples shall be collected first.)
- o the method by which turbulence and aeration/degassing will be minimized for volatiles samples.
- o methods for labeling, handling, preserving, packing, and shipping samples.
- o the program for calibration of field instruments. Instruments used for field analysis/measurements will normally be calibrated at the beginning and end of each day, or, if necessary, more frequently.
- o analytical procedures/methods for determining the concentration of constituents of interest.
- o precision, accuracy, minimum detection limits (MDL's), quantification limits (QL's), and percent recovery for each constituent/pollutant/variable.

- o in a separate volume or appendix, raw data are to be provided to allow independent data validation. (Full QA/QC documentation will not be provided with analytical results, but it will be available for inspection at the laboratory and/or provided upon request.)

Removal and disposal of septic tank contents. One representative sample each (plus appropriate QA/QC samples) of the floating solids, liquid phase(s), and sludge in the septic tank will be collected to confirm previous analyses for extraction-procedure toxics (pesticides and metals) and to determine if the contents of the septic tank are hazardous waste. For purposes of this SOW, it is assumed that the entire contents (approximately 300 gallons) will be found to be hazardous waste. After the analytical results are obtained, the services of a licensed hazardous waste transporter will be secured to pump out and remove the entire contents of the tank to a RCRA-permitted incinerator (treatment) or landfill (disposal) facility. The removal may be in containerized (drums, etc.) or bulk form. This step will achieve source control. If feasible, a method will be utilized to triple rinse the inside of the septic tank. This step may be taken while the tank is in place or after it has been removed from the ground. The rinsate will be treated/disposed offsite as a hazardous waste.

Excavation and removal of septic tank. After the tank has been emptied of its liquid and solid contents, it will be removed from the ground and disposed offsite appropriately. If feasible, a triple rinse will be performed to render the tank nonhazardous and subject only to solid waste disposal requirements to satisfy a waste minimization objective. Immediately after the tank is pulled from the ground, the outside of the tank will be closely inspected for damage, cracks, and possible leaks. The side walls and floor of the pit where the tank had been located will also be closely examined for evidence of contamination (e.g., discoloration, staining, odors, etc.). Any obvious contamination will be containerized in 55-gallon drums or stockpiled for bulk shipment to a RCRA-permitted facility for treatment (incineration) or disposal (landfill). Eight soil samples (one from each quadrant of the pit bottom and 2 each from 1-2 feet above the bottom at the ends and sides of the hole), plus appropriate QA/QC samples, will be collected and analyzed for CERCLA hazardous substance list pollutants. Comparable soil samples will be collected from corresponding depths/stratigraphic locations at one or more sites where pesticide application has not occurred in the past to assess background levels of the contaminants analyzed. The sample analyses will be done at a certified commercial lab employing EPA-approved methods and CLP QA/QC measures. Photographic documentation of the location of the samples and the condition of the pit will be produced at the time the septic system is excavated. After any apparent contamination is removed, samples are collected, and photos are taken, the pit will be backfilled to existing grade with clean, compacted fill.

Disposition of drain tiles. Drain tiles and drain-tile sediment were excavated and containerized at the time the 1988 site-characterization work was performed. All containers holding cuttings, spoils, and other wastes from that work have been categorized as hazardous or not and have been disposed appropriately under the 1988 contract.

Additional samples from drainfield area. Six additional soil samples, plus appropriate QA/QC samples, will be collected from the septic system's drainfield and analyzed for volatile organic compounds (VOC's), semivolatile organic compounds, organochlorine and organophosphorus pesticides, and total metals. The specific sampling stations will be determined by random selection from a grid network of appropriate scale established over the areal extent of the drainfield. Samples will be composites of soil collected from a depth of 6 feet to 9 feet or the cemented caliche layer, whichever is less. If contaminant concentrations are found in excess of approved actions levels, remediation of the drainfield will be undertaken. If they are comparable, the samples collected as backgrounds for the septic-tank excavation/removal will be used as backgrounds for these samples as well; if not, a comparable background sample will be collected and analyzed for the same parameters as the drainfield samples.

Disposition of washdown pad. The washdown pad will be closely inspected for evidence of contamination. If, as expected, none is evident, the concrete pad will be broken up and hauled away as solid waste. The area beneath the washdown pad will be closely inspected for evidence of contamination (e.g., discoloration, staining, odors, etc.). Any obvious contamination will be containerized in 55-gallon drums or stockpiled for bulk shipment to a RCRA-permitted facility for treatment (incineration) or disposal (landfill). Four soil samples (one from each quadrant of the area beneath the washdown pad) will be collected and analyzed for volatile organic compounds (VOC's), semivolatile organic compounds, organochlorine and organophosphorus pesticides, and total metals. After this work is done and photo-documented, the washdown pad area will be restored to existing grade with appropriate materials properly applied.

Inspection/supervision of closure. The EPA and WDOE will be notified at least 48 hours before site excavation and/or sampling activities occur to afford these agencies an opportunity to be present and to collect split samples if they desire. Notwithstanding regulatory presence or absence, site activities will be observed and/or supervised in their entirety by, at a minimum, the ARS Contracting Officer or his/her representative, the contractor's project or field manager or the professional engineer who will be certifying closure, and the contractor's site safety officer. A detailed inspection of the site and any equipment used during operations will be conducted at the close of each activity and/or work day, as appropriate, to ensure that contamination is recognized and managed properly. If analyses are required to establish whether contamination has occurred, all reasonable actions will be taken to control/contain possible exposures or spreading of contamination while awaiting the results of analysis. Decontamination wash/rinse waters will be properly managed to prevent release to the environment.

Certification of closure. Within 60 days after completion of closure activities, a professional engineer will certify closure in accordance with 40 CFR 265.115. Inasmuch as a clean closure is anticipated, 40 CFR 265.116 and 265.117 are not anticipated to be applicable.

Monitoring well installation. At the approximate time that closure activities are conducted, one or more additional ground water monitoring wells and/or piezometers will be installed and developed to supplement or replace one or more of the four (4) existing wells, if necessary. The number and location of these wells and/or piezometers will be determined by analysis of piezometric surface maps prepared from water level data collected from MW-A, MW-B, MW-C, and MW-D between June, 1988, and the initiation of work under this closure plan, and in consultation with EPA and WDOE. The construction and completion methods employed will follow and be consistent with the RCRA Ground Water Monitoring Technical Enforcement Guidance Document. At least two of the total number of wells (existing and new) will be hydraulically downgradient from the septic tank drainfield under any seasonal ground water condition. New monitoring wells will be located as close as possible to the septic system/drainfield. It is anticipated that the additional well(s) will be located a short distance east of existing MW-A. Core samples and drill cuttings will be analyzed to fully characterize site geology, including the vadose zone. Water levels in all monitoring wells and/or piezometers will be monitored on a monthly basis to facilitate analysis of seasonal variations in hydraulic gradient. The horizontal and vertical control for each well/piezometer will be surveyed to known benchmarks or reference points. Vertical control will be within 0.01 feet. A qualified geologist, hydrogeologist, or geotechnical engineer will supervise the construction and completion of all monitoring wells and piezometers. Drilling logs will be maintained for all wells/piezometers. At least one log will present continuous geological information.

Assessment of hydraulic connection. If it is not possible to determine from a reasonably-brief analysis of well logs, local water supply company records, and other sources whether a hydraulic connection exists between the uppermost aquifer and the next-lower aquifer, at least one of the new wells and/or piezometers will be constructed, or MW-B will be modified, to allow such an assessment. Modification of MW-B is favored because it is hydraulically offgradient from the septic system, and so could not lead to contamination of the next-lower aquifer from that source. This well, or one or more other wells, is also to be used to define vertical gradients that may exist within the uppermost aquifer. The method of making these assessments remains to be determined, but applicable methods may include in-casing thermal-pulse detection or adjacent completions into different aquifers or levels within the same aquifer.

Local usage of the uppermost aquifer. Additional information on the volume, spatial distribution, and hydrogeological effect of water withdrawals from the uppermost and lower aquifers within a one-mile radius of the septic system will be collected and analyzed. The effect of irrigation, other water uses, and natural and artificial aquifer recharge on water table levels and hydraulic gradients in the vicinity of the septic system will also be assessed.

Post-closure monitoring. One year (5 rounds) of quarterly post-closure monitoring will be initiated as soon after septic-tank closure as possible. The sampling and analysis will be in accordance with an approved sampling and analysis plan consistent with SW-846 and all applicable RCRA and CERCLA guidance and requirements.

Post-closure certification. Within 60 days after completion of post-closure monitoring activities and if appropriate, a post-closure certification by a professional engineer will be made in accordance with 40 CFR 265.120. Inasmuch as a clean closure is anticipated, 40 CFR 265.119 is not applicable.

CLOSURE SUPPORT

Equipment for closure and handling of wastes. Hand tools, backhoes, safety equipment, trucks, spill response equipment, and other necessities for the safe clean closure of this facility will be identified, provided, brought on site, and checked for proper operation in a manner timely to that day's activities by a contractor qualified to perform this type of work and to safely operate the equipment. Safety equipment includes that required to implement an approved site safety plan that complies with 29 CFR 1910.120. It is anticipated that level D protection will be adequate except for personnel involved directly in removing the septic tank contents, but environmental monitoring measures will be used to ensure that a proper level of protection is maintained at all times. Spill response equipment, including absorbent materials and compatible drums, will be present on site during all operations.

Disposal or decontamination of equipment, structures, and soils. Contaminated items will be either decontaminated onsite or containerized for offsite treatment/disposal at a RCRA-permitted incinerator or landfill. Offsite shipment of hazardous waste will be by licensed hazardous waste hauler and be manifested. If containerized, containers will be properly selected, marked, labeled, and managed. Decontamination measures will be specified in detail in the approved site safety plan developed for the project.

Spills and environmental contamination. If waste or contaminated materials are or may be released to the environment during or as a result of work under these specifications, affirmative measures adopted to contain, control, and clean them up as rapidly as possible will be implemented as quickly as possible. These activities will be conducted in a manner consistent with the site safety plan and other applicable Federal and State requirements. Associated activities might include, but not be limited to, collection and analysis of soil, unsaturated (vadose) zone, and ground water samples.

Environmental monitoring. The Agency for Toxic Substances and Disease Registry's Preliminary Health Assessment for this site recommended that air sampling measurements be taken before, during, and after removal operations. This recommendation will be incorporated into the project and site safety plans. The contractor will execute other appropriate routine and contingency site monitoring as specified in the approved project and site safety plans to measure/monitor emissions of contaminants to air, water, and soil and to ensure employee and public safety. The specific location of air sampling stations will be determined by meteorological conditions during site operations. Emergency and evacuation procedures in the event of air releases will be included in the site safety plan.

Risk assessment. As part of this closure, a quantitative risk assessment will be prepared, using the methodology, assumptions, and criteria contained in Office of Solid Waste and Emergency Response (OSWER) Directive 9502.00-6D (EPA Publication EPA 530/SW-89-031), or equivalent.

Split samples. If ARS, EPA, WDOE, or their designees wish to collect split samples, the contractor, acting as ARS' agent, will allow them access to do so, provided they comply with all provisions of the contractor's approved site safety plan. The contractor will not be required to provide containers, personnel, or safety equipment for the collection of split samples.

Compliance with applicable codes, standards, regulations, etc. In the performance of the required work, the contractor will be responsible for complying with all applicable Federal, State, and local regulations, codes, standards, etc. It is anticipated that these requirements will include, but not be limited to, CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA); RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA); the regulations implementing CERCLA, SARA, RCRA, and HSWA; the Department of Transportation regulations codified principally at 49 CFR 171-179; 29 CFR 1910.120; and Washington State equivalents. Where one is more stringent than another on a particular point, the more stringent will apply.

Site security. As provided in the approved project and site safety plans, the contractor will be responsible for providing and monitoring an adequate level of site security during all phases of the closure and post-closure activities.

Accidents and releases. The contractor will be required to notify ARS at the time of occurrence or discovery of any accident, injury, unauthorized access, vandalism, release of hazardous substances, or other unusual events or circumstances, or as soon afterward as possible. ARS will immediately notify EPA and WDOE.

Coordination with EPA and/or WDOE. The contractor will be directed to provide adequate notice of his site activities to accommodate EPA or WDOE requests to monitor/observe specific portions of the closure.

Plan variation. Variations from this closure plan will be evaluated and adopted if they can be demonstrated to be equivalent, cost-beneficial, technically superior, and consistent with regulatory requirements and policies.

Abandonment of monitoring wells. Upon completion of the post-closure certification process, and with the concurrence of EPA and WDOE, all monitoring wells at this site will be abandoned in accordance with the more stringent of applicable provisions of the Ground Water Monitoring Technical Enforcement Guidance Document and applicable Washington State regulations.

ACTION LEVELS

Closure phase, soil contamination. The goal of the closure activities is to achieve source control and a "clean closure" of the RCRA facility, a septic system and drainfield. This goal will be achieved, and the closure considered "clean", if the quantitative risk assessment for the "closed" facility reveals:

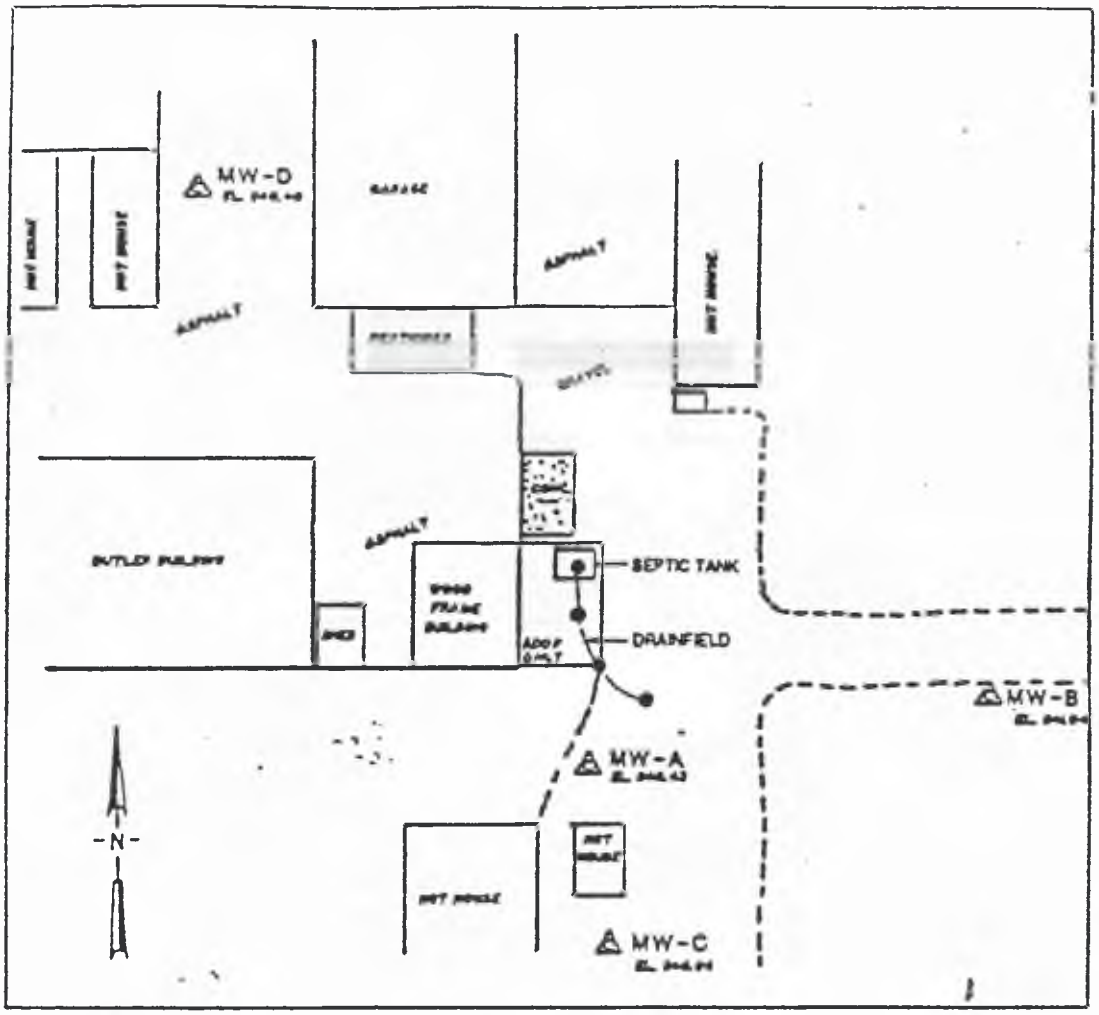
- o a cumulative noncarcinogenic risk estimate of less than 1.0, compared to the allowable daily intake, and
- o a lifetime incremental cancer risk of less than one in a million.

If attainment of this goal is not feasible, site remediation under the provisions of CERCLA will be necessary.

Post-closure phase, water contamination. The goal of the post-closure activities is to demonstrate that residual hazardous waste/constituents that may have entered the environment from the septic tank and drainfield do not represent an actual or potential threat to human health or the environment. This goal will be achieved, and a conclusion that no remedial action is required will be supported, if no contamination of ground water by pesticide products is detected, or, if detected, a quantitative risk assessment, based on existing maximum contaminant levels of incremental ground water contamination reveals:

- o a cumulative noncarcinogenic risk estimate of less than 1.0, compared to the allowable daily intake, and
- o a lifetime incremental cancer risk of less than one in a million.

If attainment of these levels is not achieved, post-closure monitoring will be continued and site remediation under the provisions of CERCLA will be undertaken. To facilitate the statistical and risk analyses, quadruplicate water samples will be taken for the first post-closure sampling event.



MW COORDINATES

WELL	NORTHING	EASTING
A	938.1	1055.6
B	950.3	1132.5
C	901.3	1060.3
D	1052.9	978.1

Basis of coordinates is the N.E. corner of the Butler building being north 1000 and east 1000.

0 30 60

Scale in Feet
Approx.

Reference: Goldman, D. (11 August 1988, personal communication).

Figure 3. Monitoring well locations.

List of Pesticides Potentially Disposed
Pesticide and Carrier Solvent Parameters

DDT

DDE

DDD

Lindane

Azinphosmethyl (Guthion)

Parathion

Paraoxon

Organophosphates

Chlorinated Hydrocarbon Scan

Diazinon

Chlorpyrifos (Dursban)

Endosulfan I and II (Thiodan)

Kelthane (dicofol)

Malathion

TEPP

Temik (aldicarb)

Captan

Carbaryl (Sevin)

Cyprex (dodine)

Benlate (benomyl)

Toluene

Xylene

Benzene

Pyrene

65GW

ENCLOSURE 2 to 9/12/89 LT

Response to May 17, 1989, EPA Comments on
Preliminary Groundwater & Soil Investigation
Yakima Agricultural Research Laboratory
and
August 17, 1989, EPA Comments on
June 23, 1989 Draft Closure Plan

May 17 Comment	Response
1.	At least one, probably two, or possibly more additional ground water monitoring wells will be installed, as provided in the proposed closure plan dated September 8, 1989. The number, location, depth, and other parameters will be determined after the selected contractor analyzes data collected from existing wells. See closure plan pages 5 and 8.
2.	Installation of at least one additional ground water monitoring well will occur, as provided in the proposed closure plan dated September 8, 1989. The number and location will be determined after the selected contractor analyzes data collected from existing wells. See closure plan pages 5 and 8.
3.	As provided in the proposed closure plan dated September 8, 1989, information on local usage of the shallow aquifer will be collected and presented in the closure report. See page 8 of closure plan.
4.	As provided in the proposed closure plan dated September 8, 1989, information on hydraulic connection of the shallow and deep aquifers and vertical gradients in the shallow aquifer will be collected and presented in the closure report. See page 8 of closure plan.
5.	See attachment A.
6.	See attachment A.
7.	Biospherics, Inc., advises that the quantitation limits (QL's) for soils are the same as the "less than" value reported for each analyte. QL's will be listed in the closure report. See page 6 of closure plan.
8.	Biospherics, Inc., advises that the Method Detection Limits (MDL's) for organochlorine pesticides are published with Method 8080 documentation. MDL's will be listed in the closure report. See page 6 of closure plan.
9.	QL's are never lower than MDL's. We will be working with Biospherics to eliminate these errors from the December 1988 report.

10. Biospherics, Inc., advises that DF-1-DT is DF-1, and that DF-2-DT is DF-2. Biospherics, Inc., advises that the depths below grade at which samples were taken were:

DF-1	0.8-1.0' and 8.1-11.8'
DF-2	7.0-11'
DF-3	7.0-7.4'
DF-4	8.2-10'
DF-5 and DF-6	0.5-1.5', 2.0-3.0', and 4.0-5.0'

DF-1 through DF-4 were not collected at the same intervals as DF-5 and DF-6 because of the septic drainfield's construction, which is described in the closure plan. As provided in the proposed closure plan dated September 8, 1989, additional soil samples and comparable background samples uninfluenced by known pesticide applications will be collected and analyzed. See page 6 of closure plan.

11. As provided in the proposed closure plan dated September 8, 1989, at least one additional background location that is uninfluenced by known pesticide applications will be established for the purpose of collecting comparable background soil samples. See page 6 of closure plan.

12. As provided in the proposed closure plan dated September 8, 1989, background samples that are comparable to soil samples will be collected and analyzed. See page 6 of closure plan.

13. As provided in the proposed closure plan dated September 8, 1989, analytical parameters for ground water samples will include the Superfund hazardous substance list volatile organic compounds. See page 5 of closure plan.

14. As noted in the closure plan, the drain tiles have already been properly disposed offsite. As provided in the proposed closure plan dated September 8, 1989, analysis of septic tank contents will include EP toxicity tests. See page 6 of closure plan.

page 3 Items 1-9 are specific requirements of the approved sampling and analysis plan to be developed by the contractor selected for closure. Item 10, which Biospherics, Inc., advised was actually MW-B, has been repaired. See page 5 of closure plan.

Aug. 17
Comment Response

1. An estimate of maximum waste quantity has been included in the proposed closure plan dated September 8, 1989. Increased description of options and constraints for removing, packaging, transporting, storing, treating, and disposing of hazardous wastes has been included in the proposed closure plan. See pages 3 and 4 of closure plan.

2. The proposed closure plan schedule has been modified to reflect the 180-day requirement. See page 2 of closure plan.

3. The proposed closure plan has been modified to provide for a decision point for continued post-closure monitoring after one year. See page 9 of closure plan.

4. Two additional soil samples (bringing the number to eight), plus QA/QC and comparable backgrounds, have been added to the portion of the closure associated with septic tank removal. Additional soil samples (a total of 12, plus QA/QC and comparable backgrounds) will be collected beneath the washdown pad and along the drainfield. See page 7 of closure plan.

5. The outline of the sampling and analysis plan for closure and post-closure activities has been made more specific. Some room has been left to accommodate the technical expertise and preferences of the selected contractor. See page 5 of closure plan.

6. Although Federal agencies are not subject to most financial assurance requirements, the closure plan has been amended to state that ARS will make funds available to complete the closure and post-closure activities. See page 2 of closure plan.

7. The closure plan has been modified to incorporate the recommendations of the Agency for Toxic Substances and Disease Registry. See page 9 of closure plan.

8. As discussed above, EPA's May 17, 1989, comments have been incorporated into the closure plan. See references to text of closure plan above.

9. The indicated sections of the draft statement of work for execution of the closure plan have been incorporated.

10. The criteria for cleanup action/completion have been modified to a risk-based approach. Specific cleanup standards will be developed in the comprehensive project plan prepared by the project contractor. See page 11 of closure plan.

Attachment 2. August and
September 1988 Data Set

DUPLICATE AND BLANK SAMPLE RESULTS
FOR THE AUGUST AND SEPTEMBER SAMPLING EVENTS

Description:	August Duplicate MW-B	September Duplicate MW-A	August Field Blank
SE/E:	YW888-3	YW988-2	YW888-6
BIOS #:	88-08-326-3	88-09-171-03	88-08-331
Parameters			
Fluoride (mg/l)	0.59	0.64	<0.1
Chloride (mg/l)	25	18	<1
Nitrate (mgn/l)	25	13	<0.1
Sulfate (mg/l)	85	24	<1
Phenols (µg/l)	<50	<50	<50
Turbidity (NTU)	0.2	0.2	0.08
Fecal Coliform (MPN/100 ml)	<2		
Radium 226 (pci/l) +/- 8	<0.6	<0.6	<0.6
Radium 228 (pci/l)	<1	<1	<1
Gross Alpha (pci/l)	11 +/- 7	<2	<2
Gross Beta (pci/l)	8 +/- 3	<3	<3
Total Organic Carbon (mg/l)	3	3	<1
Total Organic Halogen (mg/l)	27	30	13

DUPLICATE AND BLANK SAMPLE RESULTS
FOR THE AUGUST AND SEPTEMBER SAMPLING EVENTS

Description:	Field Blank September
SE/E:	YW 988-6
BIOS #:	88-09-177-03

Parameters	
Fluoride (mg/l)	<0.1
Chloride (mg/l)	<1
Nitrate (mgn/l)	<1
Sulfate (mg/l)	<1
Phenols (µg/l)	<50
Turbidity (NTU)	0.2
Fecal Coliform (MPN/100 ml)	<3
Radium 226 (pci/l) +/- 8	<0.6
Radium 228 (pci/l)	<1
Gross Alpha (pci/l)	<2
Gross Beta (pci/l) -3	<3
Total Organic Carbon (mg/l)	<1
Total Organic Halogen (mg/l)	<10

METAL ANALYSES RESULTS
August 1988

Client ID:	YW 880801	880802	880803	880804	880805	880806
MONITOR WELL	A	B	B (Dup)	C	D	Field Blank
BIOS #:	880832601	880832602	880832603	880833101	880833102	880833103
Parameter						
Arsenic (µg/l)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (µg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Selenium (µg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury (µg/l)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Silver (µg/l)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Barium (µg/l)	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Cadmium (µg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium (µg/l)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Iron (µg/l)	<0.005	<0.100	<0.100	<0.100	<0.100	<0.100
Manganese (µg/l)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Sodium (µg/l)	44	58	64	44	68	<5

METAL ANALYSES RESULTS
September 1988

Client ID:	YW 880901	880902	880903	880904	880905	880906
MONITORING WELL	A	A (Dup)	C	B	D	Field Blank
BIOS #:	8809171 01	8809171 02	8809171 03	8809177 01	8809177 02	8809177 03
Parameter						
Arsenic (µg/l)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (µg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Selenium (µg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury (µg/l)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Silver (µg/l)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Barium (µg/l)	<0.200	<0.200	<0.200	<0.200	<0.100	<0.200
Cadmium (µg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium (µg/l)	<0.010	<0.013	<0.010	<0.010	<0.010	<0.010
Iron (µg/l)	<0.005	<0.100	<0.100	<0.100	<0.100	<0.100
Manganese (µg/l)	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Sodium (µg/l)	43	49	43	62	68	<5

DUPLICATE SAMPLE RESULTS SUMMARY
FOR AUGUST AND SEPTEMBER SAMPLING EVENTS

Results

	August	September
Location:	MW-B	MW-A
SE/E:	YW-888-3	YW-988-2
BIOS #:	8808326-3	8809171-2
Method		
624	ND	ND
8080	<QL**	<QL
8120	<QL	<QL
8140	<QL	<QL
8150	<QL*	<QL

*MWA - 0.24 µg/l Dinoseb

**MWB - 0.044 µg/l p'p DDD

INORGANIC RESULTS FOR AUGUST AND SEPTEMBER SAMPLING EVENTS

Parameters	August Results				September Results			
	MWA YW888-1	MWB YW888-2	MWC YW888-3	MWD YW888-4	MWA YW988-1	MWB YW988-3	MWC YW988-4	MWD YW988-5
Fluoride (mg/l)	0.53	0.59	0.65	0.68	0.62	0.67	0.73	0.75
Chloride (mg/l)	12	28	10	12	17	15	36	22
Nitrate (mgN/l)	12	28	10	12	13	7.9	23	9.3
Sulfate (mg/L)	31	94	34	42	24	19	80	28
Phenols (µg/l)	<50	<50	<50	<50	<50	<50	<50	<50
Turbidity (NTU)	0.14	0.18	0.09	0.13	0.9	0.2	0.8	0.2
Fecal Coliform (MPN/100 ml)	negative	negative	negative	negative	<2	<2	<2	<2
Radium 226 (pci/l)	<.6	<.6	<.6	<.6	<.6	<.6	<.6	<.6
Radium 228 (pci/l)	<1	<1	<1	<1	<1	<1	<1	<1
Gross Alpha (pci/l)	7 +/- 5	8 +/- 6	8 +/- 6	<2	<2	<2	<2	<2
Gross Beta (pci/l)	8 +/- 4	5 +/- 3	4 +/- 3	9 +/- 3	<3	<3	<3	15 +/- 4
pH	7.06	7.51	7.98	7.80	6.91	7.29	7.16	7.27
Specific Conductance	1105	1546	1067	1300	967	1291	864	1082
Total Organic Carbon (mg/l)	3	4	2	2	2	2	2	2
Total Organic Halogen (µg/l)	26	27	56	30	28	50	23	22

USDA-YAKIMA
SAMPLE CHECK SHEET

Method: 8140
Matrix: Water

Sample Holding Time: 7 Days
Extract Holding Time: 14 Days

Bio Sample #	Sampling Date	Extraction Date	Analysis Date	Second Analysis Date	Sample Hold Time Met?	Extract Hold Time Met?
88-09-171 -01G	9/12/88	9/30/88	9/30/88	None	No	Yes
-02G	9/12/88	9/30/88	9/30/88	None	No	Yes
-03G	9/12/88	9/30/88	9/30/88	None	No	Yes
88-09-177 -01G	9/12/88	9/30/88	9/30/88	None	No	Yes
-02G	9/12/88	9/30/88	9/30/88	None	No	Yes
-03G	9/12/88	9/30/88	9/30/88	None	No	Yes

FOR WATER:

Method*	Sampling Holding Time	Extract Holding Time
8140	7	14
8120	7	40
8080	7	40
8150	7	30

*or comparable ground water method (600 series)

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

CLIENT ID:			QC #51			
BIO #	Blank	Amount Spiked	Blank Spike	Blk. Spk. % Rec.		
Compound:						
TEPP	<5.0	25	0	0		
Phorate	<0.20	1.0	0.53	53		
Disulfoton	<0.20	1.0	0.26	26		
Methyl parathion	<0.20	1.0	0.25	25		
Malathion	<0.20	1.0	0.30	30		
Dursban	<0.20	1.0	1.3	130		
Ethyl parathion	<0.20	1.0	1.3	130		
Diazinon	<0.20	1.0	1.6	160		
Fenthion	<0.20	1.0	0.61	61		
Azinophosmethyl	<0.80	4.0	5.8	145		
Paraoxon	<2.0	10	13.5	135		
% Surr. Recovery	100			75		

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

CLIENT ID:			QC #52		QC #53	
BIO #	Matrix Blank	Amount Spiked	MS Spike	MS % Rec.	MSD Spike	MSD % Rec.
Compound:						
TEPP	<5.0	25	0	0	0	0
Phorate	<0.20	1.0	0.52	52	0.41	47
Disulfoton	<0.20	1.0	0.18	18	0.39	39
Methyl parathion	<0.20	1.0	0.17	17	0.69	69
Malathion	<0.20	1.0	1.22	122	0.014	1.5
Dursban	<0.20	1.0	0.77	77	0.27	27
Ethyl parathion	<0.20	1.0	0.77	77	0.27	27
Diazinon	<0.20	1.0	0.82	82	0.69	69
Fenthion	<0.20	1.0	0.41	41	1.2	120
Azinophosmethyl	<0.80	4.0	4.4	111	4.5	113
Paraoxon	<2.0	10	11.6	116	11.4	114
% Surr. Recovery				91		61

NOTE: For QC #52 and 53 sample used #880917103G.

317GW

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

MW	B	D	Field Blank			
CLIENT ID:	YW988-4	YW988-2	YW988-3			
BIO #8809177	01G	02G	03G			
Compound:						
TEPP	<5.0	<5.0	<5.0			
Phorate	<0.20	<0.20	<0.20			
Disulfoton	<0.20	<0.20	<0.20			
Methyl parathion	<0.20	<0.20	<0.20			
Malathion	<0.20	<0.20	<0.20			
Dursban	<0.20	<0.20	<0.20			
Ethyl parathion	<0.20	<0.20	<0.20			
Diazinon	<0.20	<0.20	<0.20			
Fenthion	<0.20	<0.20	<0.20			
Azinophosmethyl	<0.80	<0.80	<0.80			
Paraoxon	<2.0	<2.0	<2.0			
% Surr. Recovery	58	56	65			

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

MW	A	A (dup)	C
CLIENT ID:	YW988-1	YW988-2	YW988-3
BIO #8809171	01G	02G	03G
Compound:			
TEPP	<5.0	<5.0	<5.0
Phorate	<0.20	<0.20	<0.20
Disulfoton	<0.20	<0.20	<0.20
Methyl parathion	<0.20	<0.20	<0.20
Malathion	<0.20	<0.20	<0.20
Dursban	<0.20	<0.20	<0.20
Ethyl parathion	<0.20	<0.20	<0.20
Diazinon	<0.20	<0.20	<0.20
Fenthion	<0.20	<0.20	<0.20
Azinophosmethyl	<0.80	<0.80	<0.80
Paraoxon	<2.0	<2.0	<2.0
% Surr. Recovery	46	67	94

USDA-YAKIMA
SAMPLE CHECK SHEET

Method: 8150
Matrix: Water

Sample Holding Time: 7 Days
Extract Holding Time: 30 Days

Bio Sample #	Sampling Date	Extraction Date	Analysis Date	Second Analysis Date	Sample Hold Time Met?	Extract Hold Time Met?
88-09-171 -01G	9/12/88	9/19/88	9/21 & 9/22/88		Yes*	Yes
-02G	9/12/88	9/19/88	9/21 & 9/22/88		Yes	Yes
-03G	9/12/88	9/19/88	9/21 & 9/22/88		Yes	Yes
88-09-177 -01G	9/12/88	9/19/88	9/21 & 9/22/88		Yes	Yes
-02G	9/12/88	9/19/88	9/21 & 9/22/88		Yes	Yes
-03G	9/12/88	9/19/88	9/21 & 9/22/88		Yes	Yes

*the QC Blank, Blank Spike, and the Matrix Spike and Duplicate were re-extracted since original extraction was not spiked.

FOR WATER:

Method*	Sampling Holding Time	Extract Holding Time
8140	7	14
8120	7	40
8080	7	40
8150	7	30

*or comparable ground water method (600 series)

YAKIMA PESTICIDES

EPA Method: 8150

Matrix: Water

Units Detected: µg/L, ppb

MW	A	A (dup)	C			
CLIENT ID:	YW988-1	YW988-2	YW988-3			
BIO #8809171	01G	02G	03G			
Compound:						
2,4-D	<0.10	<0.10	<0.10			
Silvex	<0.10	<0.10	<0.10			
Dinoseb	<0.10	<0.10	<0.10			

YAKIMA PESTICIDES

EPA Method: 8150

Matrix: Water

Units Detected: µg/L, PPb

MW	B	D	Field Blank			
CLIENT ID:	YW988-4	YW988-5	YW988-6			
BIO #88-09-177	01G	02G	03G			
Compound:						
2,4-D	<0.10	<0.10	<0.10			
Silvex	<0.10	<0.10	<0.10			
Dinoses	<0.10	<0.10	<0.10			

NOTE:

*2ND Column Confirmed

27, Sept. 88
9.K

GC/MS CONFIRMED

Chron. date
21 & 22 Sept. 88
GC#2

317GW

YAKIMA PESTICIDES

EPA Method: 8150

Matrix: Water

Units Detected: µg/L, ppb

CLIENT ID:			QC #42			
BIO #	Blank	Amount Spiked	Blank Spike	% Rec.		
Compound:						
2,4-D	<0.10	1.0	0.88	88		
Silvex	<0.10	1.0	0.86	86		
Dinoseb	<0.10	1.0	0.55	55		

NOTE: Sample No. 88-09-171-01G was used for matrix spike and duplicate.

YAKIMA PESTICIDES

EPA Method: 8150

Matrix: Water

Units Detected: µg/L, ppb

CLIENT ID:			QC #43		QC #44	
BIO #	Matrix Blank	Amount Spiked	Matrix Spike	MS % Rec.	Matrix Dup. Spk.	MSD % Rec.
Compound:						
2,4-D	<0.10	1.0	0.82	82	0.91	91
Silvex	<0.10	1.0	0.79	79	0.85	85
Dinoseb	<0.10	1.0	0.44	44	0.52	52

NOTE: Sample No. 88-09-171-01G was used for matrix spike and duplicate.

USDA-YAKIMA
SAMPLE CHECK SHEET

Method: 8120
Matrix: Water

Sample Holding Time: 7 Days
Extract Holding Time: 40 Days

Bio Sample #	Sampling Date	Extraction Date	Analysis Date	Second Analysis Date	Sample Hold Time Met?	Extract Hold Time Met?
88-09-171 -01G	9/12/88	9/16/88	9/27 & 9/28/88	None	Yes	Yes
-02G	9/12/88	9/16/88	9/27 & 9/28/88	None	Yes	Yes
-03G	9/12/88	9/16/88	9/27 & 9/28/88	None	Yes	Yes
88-09-177 -01G	9/12/88	9/16/88	9/27 & 9/28/88	None	Yes	Yes
-02G	9/12/88	9/16/88	9/27 & 9/28/88	None	Yes	Yes
-03G	9/12/88	9/16/88	9/27 & 9/28/88	None	Yes	Yes

FOR WATER:

Method*	Sampling Holding Time	Extract Holding Time
8140	7	14
8120	7	40
8080	7	40
8150	7	30

*or comparable ground water method (600 series)

YAKIMA PESTICIDES

EPA Method: 8120

Matrix: Water

Units Detected: µg/L

CLIENT ID:			QC #48			
BIO #	Blank	Amount Spiked	Blank Spike	Blk. Spk % Rec.		
Compound:						
1,3-dichlorobenzene	<0.40	2.0	1.2	60		
1,4-dichlorobenzene	<0.40	2.0	1.2	60		
1,2-dichlorobenzene	<0.40	2.0	1.3	65		
Hexachloroethane	<0.040	0.20	0.12	60		
1,2,4-trichlorobenzene	<0.040	0.20	0.14	70		
Hexachlorobutadiene	<0.040	0.20	0.12	60		
Hexachloropentadiene	<0.040	0.20	0.14	70		
2-chloronapthalene	<0.40	2.0	0.14	70		
Hexachlorobenzene	<0.040	0.20	0.13	65		
% Surr. Recovery	64		143	71		

NOTE: QC #49 and 50 used sample #88-09-177-03G

YAKIMA PESTICIDES

EPA Method: 8120

Matrix: Water

Units Detected: µg/L

CLIENT ID:			QC #49		QC #50	
BIO #	Matrix Blank	Amount Spiked	MS Spike	MS % Rec.	MSD Spike	MSD % Rec.
Compound:						
1,3-dichlorobenzene	<0.40	2.0	0.84	42	1.1	55
1,4-dichlorobenzene	<0.40	2.0	0.85	43	1.1	55
1,2-dichlorobenzene	<0.40	2.0	0.93	46	1.2	60
Hexachloroethane	<0.040	0.20	0.081	41	0.10	50
1,2,4-trichlorobenzene	<0.040	0.20	0.090	45	0.12	60
Hexachlorobutadiene	<0.040	0.20	0.077	38	0.098	49
Hexachloropentadiene	<0.040	0.20	0.073	37	0.12	60
2-chloronapthalene	<0.40	2.0	12	60	1.4	70
Hexachlorobenzene	<0.040	0.20	0.092	46	0.14	70
% Surr. Recovery				52		70

NOTE: QC #49 and 50 used sample #88-09-177-03G

YAKIMA PESTICIDES

EPA Method: 8120

Matrix: Water

Units Detected: µg/L, ppb

MW	A	A (dup)	C			
CLIENT ID:	YW988-1	YW9882.	YW988-3			
BIO #8809171	01G	02G.	03G			
Compound:						
1,3-dichlorobenzene	<0.40	<0.40	<0.40			
1,4-dichlorobenzene	<0.40	<0.40	<0.40			
1,2-dichlorobenzene	<0.40	<0.40	<0.40			
Hexachloroethane	<0.040	<0.040	<0.040			
1,2,4-trichlorobenzene	<0.040	<0.040	<0.040			
Hexachlorobutadiene	<0.040	<0.040	<0.040			
Hexachloropentadiene	<0.040	<0.040	<0.040			
2-chloronapthalene	<0.40	<0.40	<0.40			
Hexachlorobenzene	<0.040	<0.040	<0.040			
% Surr. Recovery	110	78	55			

NOTE: QC Qssy. are #48, 49 & 50.

YAKIMA PESTICIDES

EPA Method: 8120

Matrix: Water

Units Detected: µg/L, ppb

MW	B	D	Field Blank			
CLIENT ID:	YW988-4	YW988-5	YW988-6			
BIO #8809177	01G	02G.	03G			
Compound:						
1,3-dichlorobenzene	<0.40	<0.40	<0.40			
1,4-dichlorobenzene	<0.40	<0.40	<0.40			
1,2-dichlorobenzene	<0.40	<0.40	<0.40			
Hexachloroethane	<0.040	<0.040	<0.040			
1,2,4-trichlorobenzene	<0.040	<0.040	<0.040			
Hexachlorobutadiene	<0.040	<0.040	<0.040			
Hexachloropentadiene	<0.040	<0.040	<0.040			
2-chloronapthalene	<0.40	<0.40	<0.40			
Hexachlorobenzene	<0.040	<0.040	<0.040			
% Surr. Recovery	62	76	17			

NOTE: QC Qssy. are #48, 40 & 50.

USDA-YAKIMA
SAMPLE CHECK SHEET

Method: 8080
Matrix: Water

Sample Holding Time: 7 Days
Extract Holding Time: 40 Days

Bio Sample #	Sampling Date	Extraction Date	Analysis Date	Second Analysis Date	Sample Hold Time Met?	Extract Hold Time Met?
88-09-171						
-01G	9/12/88	9/16/88	9/19 & 9/20/88	None	Yes	Yes
-02G	9/12/88	9/16/88	9/19 & 9/20/88	None	Yes	Yes
-03G	9/12/88	9/16/88	9/19 & 9/20/88	None	Yes	Yes
88-09-177						
-01G	9/12/88	9/16/88	9/19 & 9/20/88	None	Yes	Yes
-02G	9/12/88	9/16/88	9/19 & 9/20/88	None	Yes	Yes
-03G	9/12/88	9/16/88	9/19 & 9/20/88	None	Yes	Yes

FOR WATER:

Method*	Sampling Holding Time	Extract Holding Time
8140	7	14
8120	7	40
8080	7	40
8150	7	30

*or comparable ground water method (600 series)

YAKIMA PESTICIDES

EPA Method: 8080

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

CLIENT ID:			QC #45			
BIO #	Blank	Amount Spiked	Blank Spike	Blk. Spk. % Rec.		
Compound:						
Lindane	<0.010	0.040	0.039	98		
Heptachlor	<0.020	0.040	0.035	87		
Aldrin	<0.020	0.040	0.035	87		
Endrin	<0.020	0.10	0.090	90		
Dieldrin	<0.040	0.10	0.10	100		
P'P-DDT	<0.040	0.10	0.099	99		
% Surr. Recovery	81			97		

NOTE: For QC #46 and 47 sample number used 880917102G.

YAKIMA PESTICIDES

EPA Method: 8080

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

CLIENT ID:			QC #40		QC #41	
BIO #	Matrix Blank	Amount Spiked	MS Spike	MS % Rec.	MSD Spike	MSD % Rec.
Compound:						
Lindane	<0.010	0.040	0.035	87	0.036	90
Heptachlor	<0.020	0.040	0.032	80	0.034	85
Aldrin	<0.020	0.040	0.032	80	0.034	85
Endrin	<0.020	0.10	0.085	85	0.086	86
Dieldrin	<0.040	0.10	0.090	96	0.098	98
P'P-DDT	<0.040	0.10	0.091	91	0.094	94
% Surr. Recovery				92		90

NOTE: For QC #46 and 47 sample number used 880917102G.

YAKIMA PESTICIDES

EPA Method: 8080

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

MW	B	D	Field Blank			
CLIENT ID:	YW988-4	YW988-5	YW988-6			
BIO #8809177	01G	02G	03G			
Compound:						
Lindane	<0.010	<0.010	<0.010			
ENDO I	<0.020	<0.020	<0.020			
P'P-DDE	<0.020	<0.020	<0.020			
Endrin	<0.020	<0.020	<0.020			
ENDO II	<0.040	<0.040	<0.040			
P'P-DDD	<0.040	<0.040	<0.040			
P'P-DDT	<0.040	<0.040	<0.040			
Methoxychlor	<0.20	<0.20	<0.20			
% Surr. Recovery	100	96	93			

NOTE: QC for 8080 are #45, 46, and 47

Surr. Dibutylchlorendate (DBC)

YAKIMA PESTICIDES

EPA Method: 8080

Matrix: Water

Units Detected: µg/L, ppb

MW	A	A (dup)	C			
CLIENT ID:	YW988-1	YW988-2	YW988-3			
BIO #8809177	01G	02G	03G			
Compound:						
Lindane	<0.010	<0.010	<0.010			
ENDO I	<0.020	<0.020	<0.020			
P'P-DDE	<0.020	<0.020	<0.020			
Endrin	<0.020	<0.020	<0.020			
ENDO II	<0.040	<0.040	<0.040			
P'P-DDD	<0.040	<0.040	<0.040			
P'P-DDT	<0.040	<0.040	<0.040			
Methoxychlor	<0.20	<0.20	<0.20			
% Surr. Recovery	95	99	92			

NOTE: QC for 8080 are #45, 46, and 47

317GW

USDA-YAKIMA
SAMPLE CHECK SHEET

Method: 8140
Matrix: Water

Sample Holding Time: 7 Days
Extract Holding Time: 14 Days

Bio Sample #	Sampling Date	Extraction Date	Analysis Date	Second Analysis Date	Sample Hold Time Met?	Extract Hold Time Met?
88-08-331						
-01A	8/15/88	8/22/88	8/22 to 8/23/88	None	Yes	Yes
-02A	8/15/88	8/18/88	8/22 to 8/23/88	None	Yes	Yes
-03A	8/15/88	8/18/88	8/22 to 8/23/88	None	Yes	Yes
88-08-326 -01A	8/15/88	8/18/88	8/22 to 8/23/88	None	Yes	Yes
-02A	8/15/88	8/18/88	8/22 to 8/23/88	None	Yes	Yes
-03A	8/15/88	8/18/88	8/22 to 8/23/88	None	Yes	Yes

FOR WATER:

Method*	Sampling Holding Time	Extract Holding Time
8140	7	14
8120	7	40
8080	7	40
8150	7	30

*or comparable ground water method (600 series)

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

CLIENT ID:			QC #34			
BIO #	Blank	Amount Spiked	Blank Spike	% Rec.		
Compound:						
TEPP	<5.0	25	19	76		
Phorate	<0.2	1.0	0.86	86		
Disulfoton	<0.2	1.0	0.73	73		
Methyl parathion	<0.2	1.0	0.86	86		
Malathion	<0.2	1.0	0.91	91		
Dursban	<0.2	1.0	0.94	94		
Ethyl parathion	<0.2	1.0	0.94	94		
Diazinon	<0.2	1.0	0.93	93		
Fenthion	<0.2	1.0	0.88	88		
Azinophosmethyl	<0.8	1.0	4.4	110		
Paraoxon	<2.0	10	11	110		
% Surr. Recovery	110		100			

NOTE: QC #34, 35, and 36

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

CLIENT ID:			QC #35			
BIO #	Matrix Blank	Amount Spiked	Matrix Spike	MS % Rec.	Matrix Spk. Dup.	MSD % Rec.
Compound:						
TEPP	<5.0	25	24	96	16	64
Phorate	<0.2	1.0	1.1	110	0.85	85
Disulfoton	<0.2	1.0	0.95	95	0.78	78
Methyl parathion	<0.2	1.0	1.1	110	0.91	91
Malathion	<0.2	1.0	1.1	110	0.94	94
Dursban	<0.2	1.0	1.2	120	0.98	98
Ethyl parathion	<0.2	1.0	1.2	120	0.98	98
Diazinon	<0.2	1.0	1.2	120	0.91	91
Fenthion	<0.2	1.0	1.2	120	0.95	95
Azinophosmethyl	<0.8	4.0	7.0	170	6.5	160
Paraoxon	<2.0	10	15	150	11	110
% Surr. Recovery	98			130		85

NOTE: QC #34, 35, and 36

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

MW	A	B	B (dup)			
CLIENT ID:	YW888-1	YW888-2	YW888-3			
BIO #8808326	01A	02A	03A	EPTOX Blank	EPTOX 8A, 10A	EPTOX 9, 11, 12, 13
Compound:						
TEPP	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Phorate	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Disulfoton	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methyl parathion	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dursban	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethyl parathion	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Diazinon	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Fenthion	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinophosmethyl	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Paraoxon	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
% Surr. Recovery	129	134	146	No Surr.	376*	154

*Reanalysis of this sample on October 3, 1988 had the same sample results with surrogate recovery of 64%.

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

MW	C	D	Field Blank			
CLIENT ID:	YW888-4	YW888-5	YW888-6			
BIO #8808331	01A	02A	03A			
Compound:						
TEPP	<5.0	<5.0	<5.0			
Phorate	<0.2	<0.2	<0.2			
Disulfoton	<0.2	<0.2	<0.2			
Methyl parathion	<0.2	<0.2	<0.2			
Malathion	<0.2	<0.2	<0.2			
Dursban	<0.2	<0.2	<0.2			
Ethyl parathion	<0.2	<0.2	<0.2			
Diazinon	<0.2	<0.2	<0.2			
Fenthion	<0.2	<0.2	<0.2			
Azinophosmethyl	<0.8	<0.8	<0.8			
Paraoxon	<2.0	<2.0	<2.0			
% Surr. Recovery	BDL*	98	112			

*Reanalysis of this sample of October 3, 1988 had the same sample result with a surrogate recovery of 46%.

YAKIMA PESTICIDES

EPA Method: 8140

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

MW	C					
CLIENT ID:	YW888-4					
BIO #8808331	01A	EPTOX 8A & 10A				
Compound:						
TEPP	<5.0	<5.0				
Phorate	<0.2	<0.2				
Disulfoton	<0.2	<0.2				
Methyl parathion	<0.2	<0.2				
Malathion	<0.2	<0.2				
Dursban	<0.2	<0.2				
Ethyl parathion	<0.2	<0.2				
Diazinon	<0.2	<0.2				
Fenthion	<0.2	<0.2				
Azinophosmethyl	<0.8	<0.8				
Paraoxon	<2.0	<2.0				
% Surr. Recovery	46	64				

NOTE: QC #51, 52, and 53

USDA-YAKIMA
SAMPLE CHECK SHEET

Method: 8150
Matrix: Water

Sample Holding Time: 7 Days
Extract Holding Time: 30 Days

Bio Sample #	Sampling Date	Extraction Date	Analysis Date	Second Analysis Date	Sample Hold Time Met?	Extract Hold Time Met?
88-08-321 -01A	8/15/88	8/22/88	9/2 and 9/3/88	NTBC	Yes	Yes
-02A	8/15/88	8/22/88	9/2 and 9/3/88	--	Yes	Yes
-03A	8/15/88	8/22/88	9/2 and 9/3/88	--	Yes	Yes
88-08-326 -01A	8/15/88	8/22/88	9/2 and 9/3/88	9/6/88	Yes	Yes
-02A	8/15/88	8/22/88	9/2 and 9/3/88	--	Yes	Yes
-03A	8/15/88	8/22/88	9/2 and 9/3/88	--	Yes	Yes

NTBC - Not to be confirmed

FOR WATER:

Method*	Sampling Holding Time	Extract Holding Time
8140	7	14
8120	7	40
8080	7	40
8150	7	30

*or comparable ground water method (600 series)

YAKIMA PESTICIDES

EPA Method: 8150

Matrix: Water

Units Detected: µg/L, ppb

CLIENT ID:			QC #31			
BIO #	Blank	Amount Spiked	Blank Spike	% Rec.		
Compound:						
2,4-D	0.0016	1.0	0.76	76		
Silvex	<0.10	1.0	0.77	77		
Dinoseb	<0.10	1.0	0.67	67		

NOTE: QC #31, 32, and 33

YAKIMA PESTICIDES

EPA Method: 8150

Matrix: Water

Units Detected: µg/L, ppb

CLIENT ID:			QC #32		QC #33	
BIO #	Matrix Blank	Amount Spiked	Matrix Spike	MS % Rec.	MSD Spike	MSD % Rec.
Compound:						
2,4-D	0.012	1.0	0.77	77	0.73	73
Silvex	<0.10	1.0	0.69	69	0.75	75
Dinoseb	<0.10	1.0	0.68	68	0.75	75

NOTE: QC #31, 32, and 33

YAKIMA PESTICIDES

EPA Method: 8150

Matrix: Water

Units Detected: µg/L, ppb

MW	A	B	B (dup)			
CLIENT ID:	YW888-1	YW888-2	YW888-3			
BIO #8808326	01A	02A	03A	EPTOX Blank	EPTOX YS8, 10	EPTOX YS9, 11 12, 13
Compound:						
2,4-D	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Silvex	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dinoseb	0.24*	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: QC #31, 32, and 33

*2nd Column Confirmed.

YAKIMA PESTICIDES

EPA Method: 8150

Matrix: Water

Units Detected: µg/L, ppb

MW	C	D	Field Blank			
CLIENT ID:	YW888-4	YW888-5	YW888-6			
BIO #8808331	01A	02A	03A			
Compound:						
2,4-D	<0.10	<0.10	<0.10			
Silvex	<0.10	<0.10	<0.10			
Dinoseb	<0.10	<0.10	<0.10			

NOTE: QC #31, 32, and 33

USDA-YAKIMA
SAMPLE CHECK SHEET

Method: 8120
Matrix: Water

Sample Holding Time: 7 Days
Extract Holding Time: 40 Days

Bio Sample #	Sampling Date	Extraction Date	Analysis Date	Second Analysis Date	Sample Hold Time Met?	Extract Hold Time Met?
88-08-331						
-01A	8/15/88	8/22/88	9/01/88		Yes	Yes
-02A	8/15/88	8/17/88	9/01/88		Yes	Yes
-03A	8/15/88	8/17/88	9/01/88		Yes	Yes
88-08-326						
-01A	8/15/88	8/17/88	9/01/88		Yes	Yes
-02A	8/15/88	8/17/88	9/01/88		Yes	Yes
-03A	8/15/88	8/17/88	9/01/88		Yes	Yes
EPTOX YS8, YS10	8/15/88	8/22/88	9/01/88		Yes	Yes
EPTOX YS9, 11 12, 13	8/15/88	8/22/88	9/01/88		Yes	Yes

FOR WATER:

Method*	Sampling Holding Time	Extract Holding Time
8140	7	14
8120	7	40
8080	7	40
8150	7	30

*or comparable ground water method (600 series)

YAKIMA PESTICIDES

EPA Method: 8120

Matrix: Water

Units Detected: µg/L, ppb

CLIENT ID:			QC #37			
BIO #	Blank	Amount Spiked	Blank Spike	% Rec.		
Compound:						
1,3-dichlorobenzene	<0.40	2.0	1.5	75		
1,4-dichlorobenzene	<0.40	2.0	1.5	75		
1,2-dichlorobenzene	<0.40	2.0	1.8	90		
Hexachloroethane	<0.040	0.20	0.13	65		
1,2,4-trichlorobenzene	<0.040	0.20	0.18	90		
Hexachlorobutadiene	<0.040	0.20	0.13	65		
Hexachloropentadiene	<0.040	0.20	0.16	80		
2-chloronapthalene	<0.40	2.0	2.1	110		
Hexachlorobenzene	<0.040	0.20	0.17	85		
% Surr. Recovery	63			92		

NOTE: QC #37 and 38, 37 is blank used sample number 8808331-03A.

YAKIMA PESTICIDES

EPA Method: 8120

Matrix: Water

Units Detected: µg/L, ppb

CLIENT ID:			QC #38			
BIO #	Matrix Blank	Amount Spiked	Matrix Spike	MS % Rec.		
Compound:						
1,3-dichlorobenzene	<0.40	2.0	1.5	75		
1,4-dichlorobenzene	<0.40	2.0	1.5	75		
1,2-dichlorobenzene	<0.40	2.0	1.7	85		
Hexachloroethane	<0.040	0.20	0.13	65		
1,2,4-trichlorobenzene	<0.040	0.20	0.17	85		
Hexachlorobutadiene	<0.040	0.20	0.13	65		
Hexachloropentadiene	<0.040	0.20	0.15	75		
2-chloronapthalene	<0.40	2.0	1.9	95		
Hexachlorobenzene	<0.040	0.20	0.20	100		
% Surr. Recovery	100			91		

NOTE: QC #37 and 38, 37 is blank, 38 used sample number 8808331-03A.

317GW

YAKIMA PESTICIDES

EPA Method: 8120

Matrix: Water

Units Detected: µg/L, ppb

MW	C	D	Field Blank			
CLIENT ID:	YW888-4	YW888-5	YW888-6			
BIO #	01A	02A	03A	EPTOX Blank	EPTOX YS8, 10	EPTOX YS9, 11 12, 13
Compound:						
1,3-dichlorobenzene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
1,4-dichlorobenzene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
1,2-dichlorobenzene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Hexachloroethane	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,2,4-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Hexachlorobutadiene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Hexachloropentadiene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
2-chloronapthalene	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Hexachlorobenzene	<0.040	<0.004	<0.040	<0.040	<0.040	<0.040
% Surr. Recovery	110	96	100	No DBC	77	98

NOTE: QC #37 and 38. No surr. was added to EPTOX Blank.

YAKIMA PESTICIDES

EPA Method: 8120

Matrix: Water

Units Detected: µg/L, ppb

MW	A	B	B (dup)			
CLIENT ID:	YW8881	YW8882	YW8883			
BIO #	01A	02A	03A			
Compound:						
1,3-dichlorobenzene	<0.40	<0.40	<0.40			
1,4-dichlorobenzene	<0.40	<0.40	<0.40			
1,2-dichlorobenzene	<0.40	<0.40	<0.40			
Hexachloroethane	<0.040	<0.040	<0.040			
1,2,4-trichlorobenzene	<0.040	<0.040	<0.040			
Hexachlorobutadiene	<0.040	<0.040	<0.040			
Hexachloropentadiene	<0.040	<0.040	<0.040			
2-chloronapthalene	<0.40	<0.40	<0.40			
Hexachlorobenzene	<0.040	<0.040	<0.040			
% Surr. Recovery	72	48	94			

USDA-YAKIMA
SAMPLE CHECK SHEET

Method: 8080
Matrix: Water

Sample Holding Time: 7 Days
Extract Holding Time: 40 Days

Bio Sample #	Sampling Date	Extraction Date	Analysis Date	Second Analysis Date	Sample Hold Time Met?	Extract Hold Time Met?
88-08-325 -01A	8/15/88	8/22/88	8/29 to 8/30/88	9/1/88	Yes	Yes
-02A	8/15/88	8/17/88	8/29 to 8/30/88	9/1/88	Yes	Yes
-03A	8/15/88	8/17/88	8/29 to 8/30/88	9/1/88	Yes	Yes
88-08-326 -01A	8/15/88	8/17/88	8/29 to 8/30/88	9/1/88	Yes	Yes
-02A	8/15/88	8/17/88	8/29 to 8/30/88	9/1/88	Yes	Yes
-03A	8/15/88	8/17/88	8/29 to 8/30/88	9/1/88	Yes	Yes
EPTOX YS8, YS10	8/15/88	8/22/88	8/29 to 8/30/88	9/1/88	Yes	Yes
EPTOX YS9, 11 12, 13	8/15/88	8/22/88	8/29 to 8/30/88	9/1/88	Yes	Yes

FOR WATER:

Method*	Sampling Holding Time	Extract Holding Time
8140	7	14
8120	7	40
8080	7	40
8150	7	30

*or comparable ground water method (600 series)

YAKIMA PESTICIDES

EPA Method: 8080

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

CLIENT ID:			QC #39			
BIO #	Blank	Amount Spiked	Blank Spike	Blk. Spk. % Rec.		
Compound:						
Lindane	<0.010	0.040	0.044	110		
Heptachlor	<0.020	0.040	0.039	97		
Aldrin	<0.020	0.040	0.037	91		
Endrin	<0.020	0.10	0.10	100		
Dieldrin	<0.040	0.10	0.11	110		
P'P-DDT	<0.040	0.10	0.12	120		
% Surr. Recovery	93			120		

YAKIMA PESTICIDES

EPA Method: 8080

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

CLIENT ID:			QC #40		QC #41	
BIO #	Matrix Blank	Amount Spiked	MS Spike	MS % Rec.	MSD Spike	MSD % Rec.
Compound:						
Lindane	<0.010	0.040	0.035	88	0.041	100
Heptachlor	<0.020	0.040	0.033	82	0.038	95
Aldrin	<0.020	0.040	0.032	80	0.037	92
Endrin	<0.020	0.10	0.082	82	0.094	94
Dieldrin	<0.040	0.10	0.093	93	0.11	110
P'P-DDT	<0.040	0.10	0.098	98	0.11	110
% Surr. Recovery	110			92		100

QC #40 and 41 used sample number 880832602A

YAKIMA PESTICIDES

EPA Method: 8080

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

MW	C	D	Field Blank			
CLIENT ID:	YW8884	YW8885	YW8886			
BIO #8808331	01A	02A	03A	EPTOX Blank	EPTOX YS8, 10	EPTOX YS9, 11 12, 13
Compound:						
Lindane	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
ENDO I	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
P'P-DDE	<0.020	<0.020	<0.020	<0.020	0.032*	<0.020
Endrin	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
ENDO II	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
P'P-DDD	<0.040	0.044*	<0.040	<0.040	0.094*	<0.040
P'P-DDT	<0.040	<0.040	<0.040	<0.040	0.25*	0.11*
Methoxychlor	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
% Surr. Recovery	110	100	100		120	130

QC #39, 40, and 41
*2nd column confirmed

YAKIMA PESTICIDES

EPA Method: 8080

Matrix: Water

Units Detected: µg/L, ppb

REANALYSIS

MW	A	B	B (dup)			
CLIENT ID:	YW8881	YW8882	YW8883			
BIO #8808326	01A	02A	03A			
Compound:						
Lindane	<0.010	<0.010	<0.010			
ENDO I	<0.020	<0.020	<0.020			
P'P-DDE	<0.020	<0.020	<0.020			
Endrin	<0.020	<0.020	<0.020			
ENDO II	<0.040	<0.040	<0.040			
P'P-DDD	<0.040	<0.040	<0.040			
P'P-DDT	<0.040	<0.040	<0.040			
Methoxychlor	<0.20	<0.20	<0.20			
% Surr. Recovery	110	110	110			

QC #39, 40, and 41

317GW